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current research

INTRODUCING MICROCOMPUTERS INTO HISTORY TEACHING AND RESEARCH: THE DISH PROJECT

Rick Trainor O)

Abstract: This report describes the aims, early activities and future plans of the CTI project for the Design and Implementation of Software in History at Glasgow University.

I. Rationale of the Project

For many years historians at Glasgow, assisted by external funding, have been generating large, complex databases from sources such as local government rating records, marriage registers and corporate accounts. The DISH Project grew out of a desire to implement these data in teaching while continuing to develop them for scholarly purposes. DISH's progenitors believe that students should not be confined to passive appreciation of the growing body of computer-based historical research; students need to analyse databases actively and critically, just as they have always examined traditional printed and manuscript sources. Approached in this way, student access to computerised data can enhance historical understanding while providing "transferable skills" in information technology. These objectives require appropriate teaching methods, data sets, and software. These latter, unlike existing software, must allow sophisticated analysis of bulky alphanumeric databases without forcing students either to master intricate packages or to submerge the richness of historical data in expensive coding. If successful, the project's software, teaching approaches and databases could have a major impact on history and related subjects both at Glasgow and in other educational institutions.

II. Specific Aims of the Project

It was decided to implement computer-based teaching alongside software development. That juxtaposition would maximize the spread of computer methods in a large subject area while providing concrete tests for ideas about teaching methods and software development design as they emerged. In the early stages of software development existing packages would be imported and adapted. Having made such enhancements, and having observed existing software in classroom use, the programmer would be develop an analysis package especially adapted to historical sources. Since continuing data used in teaching, the programmer would also design a data entry package. Documentation, training courses and systematic evaluation would assist the diffusion of DISH's methods and products both at Glasgow and elsewhere.

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III. Funding and Initial Implementation

Announced in April 1985, the DISH Project's grant from the Computer Board was for £93,000 over two years. This sum financed the services of a programmer and the acquisition of appropriate hardware, software and maintenance. The project team opted for the Research Machines Nimbus because of its networking capability, graphics, speed, price and wide use in education. A network of 16 workstations (each with 1 MB of RAM) was linked through a fileserver to a hard disk and, via a communications PAD, to the Glasgow mainframe and JANET. Glasgow University provided an additional £56,000 for departmental clusters of Nimbuses, room conversion, lab operating expenses and the services of a lab manager.

These facilities and staff were available in October 1985 when DISH began formal operation. Reflecting a broad approach to history and a conviction that computer-based teaching and research should be interrelated, it did so as a joint enterprise of Glasgow's Economic, Modern, and Scottish History Departments and University Archives in collaboration with the Computing Service and the Computing Science Department.

IV. Achievements of the Project

Teaching began in November 1985. Weekly workshops in historical computing were developed in two existing subject-centred honours courses. In addition, a new skills-centred introduction to historical computing was launched for all students about to enter their final year. In both types of course the sessions had three parts. The historians discussed relevant historical issues, sources and techniques; the lab manager provided instruction on computer skills; and the students undertook increasingly open-ended exercises using existing historical databases on political, social, and economic themes. For example, a workshop centred around a Glasgow-generated dataset on the 19th and early 20th century bankruptcies allowed students to discover, for a specific county, the towns and industries whose firms most often failed. In conjunction with information from traditional sources relating the case to the national context, this exercise provided insights into the relative decline of the British economy during the period while enhancing the students' ability to carry out simple numerical analysis on the Computer. Subsequently some students veterans of these courses prepared dissertations, creating databases which will be available for teaching in subsequent years.

Approximately 100 students were enrolled in DISH courses during the project's first academic year. Despite a general lack of keyboard skills, within a few weeks nearly all students were making reasonable progress in basic computational techniques. To cope with students demand the History Computing lab and staff advice were made available throughout the working day. Consequently students were able to undertake more sophisticated tasks, and there were numerous volunteers for optional computer-based essays. Student reaction was assessed by discussions groups, by questionnaires and by student interviews conducted by Mr. Charles Anderson of Edinburgh University's Education Department. In general the students showed competence and enthusiasm. A large majority agreed that the computer could help their study of history, and virtually all felt that it was useful to acquire familiarity with information technology.

Concerning software development, during the 1985-86 academic session a detailed specification was prepared for an interface to a database management system (Superfile by Southdata). This interface is intended to permit speedy analysis of large quantities of data without corrupting the appearance and integrity of the original sources, which usually contain several types of information for each record. The final package will allow students to access and scan a variety of on-line databases, to formulate

complex relational queries, to perform simple statistical operations, and to display or store output in a variety of formats. The software will exploit the colour and graphics capabilities of the Nimbus; a menu driven system with windowed work-areas is envisaged which will be accessed from keyboard and mouse. As a first stage the programmer has produced a program Quanal (Quest Analysis) which provides automatic analysis of time series data held in files created by Quest searches. In addition, a flexible data entry and editing package is in the final stages of preparation. All DISH software is being designed for portability between machines and will be able to interface with a number of commercially available database management systems.

The project team has put a high priority on outreach, both within and beyond Glasgow University. A training course for history staff was oversubscribed, and three colleagues have already joined in the project's teaching. Collaboration with computing staff and students on ICL's Content Addressable File Store (CAFS) has assisted the project team in constructing teaching datasets from large mainframe databases. DISH has also helped to launch new historical research projects which in due course will have spinoffs for teaching. Outside Glasgow, DISH has shared evaluations and packages with colleagues at Edinburgh and Hull respectively. Moreover, a project brochure and numerous conference papers have produced a steady stream of visitors, many enquiries and the prospect of external trials of DISH software.

V. Potential and Applicability

In the second year teaching will be extended into another three honours courses and at least one pre-honours course. This will bring more than 150 new students into the teaching lab and will extend the number of periods and countries covered. With the help of DISH user guides and enhanced handouts for exercises, increased attention will be given to student preparation away from the lab. It is hoped that students will devote more time to designing problem-solving strategies and will resist the temptation to accept computer output as "answers" without reference to the appropriate historical context. In software design, a preliminary version of the project's interface to Superfile will be ready by the end of the second year. Also, further collaboration with the Computing Science Department will produce on-line bibliographies specifically designed for use in the classroom. Evaluation of teaching methods and software will be stepped up with the help of Glasgow's Higher Education Resource Centre and continued cooperation with Edinburgh University. There will be a pilot summer school for archivists and teachers of history at all levels as well as further training for Glasgow history staff.

The realisation of DISH'S fuller aims - the penetration of the bulk of Glasgow courses most suited to computer-based teaching, the integration of the various software elements into a single package, its tailoring to run on various machines, and full documentation of the software and its accompanying datasets - will depend on securing resources to extend the project beyond the initial two years. It is in this subsequent period, too, that systematic dissemination of DISH'S results to other institutions would occur, aided by a proposed newsletter and an expanded summer school.

What relevance does DISH have to computer-based teaching initiatives elsewhere? The project's database and exercises will mainly be of interest to other historians. Concerning software, although DISH's packages are being specially designed for history, they should also be useful in other subjects with data that is large in quantity and complex in structure. In addition, computer-based teaching projects in an even broader range of disciplines may want to consider (if only to reject!) DISH's major educational assumptions: the utility of teaching IT and a particular subject simultaneously; the need to integrate computer-based teaching with traditional sources and methods; the benefits of combining such instruction with students and staff research;

the pedagogical value of the imagination and precision demanded by ambitious computer exercises; and advisability of a subordinate though significant role for word processing. Likewise, projects in other institutions may wish to assess DISH's principal organisational decisions: to undertake software development and teaching simultaneously, to base its operations in the subject departments themselves, to focus initially on advanced teaching, and to emphasize protability as well as local implementation. Finally, those considering similar initiatives may wish to ponder the heavy demands on staff time as well as the many academic satisfactions associated with an enterprise such as DISH.